

CLAIMS

1. Device enabling different spreading factors whilst preserving a common scrambling code, in particular for transmission in a code division multiple access cellular mobile radio system, the device including, on
 5 transmission, scrambling means for applying a scrambling code of length Q_{MAX} which is a multiple of said different spreading factors, to blocks of Q_{MAX} basic symbols obtained by spreading by means of any of said spreading
 10 factors.

2. Device according to claim 1, including, on transmission, for spreading K incoming sequences by means of K respective spreading codes of respective length Q_k ($k=1, \dots, K$) which is a sub-multiple of a maximum length
 15 Q_{MAX} , and scrambling the spread sequences obtained in this way:

- means for grouping the various data symbols of the kth incoming sequence ($k=1, \dots, K$) into different blocks of Q_{MAX}/Q_k symbols.
- 20 • means for spreading the different blocks from the kth incoming sequence ($k=1, \dots, K$) by means of the corresponding code of length Q_k to obtain a spread sequence including different spread blocks of length Q_{MAX} .
- means for scrambling each of the K spread
 25 sequences obtained in this way using a scrambling code of length Q_{MAX} .

3. Device enabling different spreading factors whilst preserving a common scrambling code, in particular for transmission in a code division multiple access
 30 cellular mobile radio system, the device including, on

SUB 37

reception, descrambling means for applying a scrambling code of length Q_{MAX} which is a multiple of said different spreading factors, to blocks of Q_{MAX} basic symbols obtained by spreading by means of any of said spreading factors.

4. Device according to claim 3, including, on reception, for descrambling and despreading an incoming sequence by means of K respective spreading codes of respective length Q_k ($k=1, \dots, K$) which is a sub-multiple of a maximum length Q_{MAX} :

- means for descrambling said incoming sequence using a scrambling code of length Q_{MAX} ,
- means for grouping the basic symbols of the spread and descrambled sequence obtained in this way in different spread blocks of length Q_{MAX} ,
- means for despreading the spread blocks obtained in this way by means of K respective codes to obtain K despread sequences formed of different blocks of Q_{MAX}/Q_k symbols ($k=1, \dots, K$).

5. A mobile station for a mobile radiocommunication system, comprising a device according to ~~any of claims 1 to 4.~~ ^{Claim 1}

6. An entity, in particular base transceiver station, for a mobile radiocommunication system, comprising a device according to ~~any of claims 1 to 4.~~ ^{Claim 1}

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